Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS")	)	GN Docket No. 96-228
	)	

OPPOSITION TO PETITION FOR RECONSIDERATION

Metricom, Inc.("Metricom"), pursuant to Section 1.429(f) of the Commission's rules and the Commission's Public Notice concerning the above-referenced matter dated March 13, 1997, hereby submits this Opposition to the Petition for Expedited Reconsideration of the Wireless Cable Association International, Inc. (the "WCA Petition"). The WCA requests the Commission to reconsider its decision not to impose power limitations on the new Wireless Communications Service ("WCS"). WCA alleges that power limitations are necessary to avoid what WCA alleges will be blanketing interference which could adversely effect MDS and ITFS operations. For the reasons discussed more fully below, the WCA Petition should be denied.

I. BACKGROUND

1. Metricom is a young, rapidly growing, technologically innovative company based in Silicon Valley. In accordance with the encouragement of the Commission in various Part 15 proceedings, Metricom is a pioneer in the development of state-of-the-art, Part 15, unlicensed spread spectrum systems operating in the congested

902-928 MHz frequency band. Metricom has invested significant sums of money, time and energy to develop, manufacture and market these sophisticated RF devices pursuant to Part 15 of the Commission's rules -- which requires that devices must not cause interference to, and must accept interference from, other operations in the band. Metricom is, therefore, quite cognizant of design and engineering problems associated with operations in a congested frequency band with many higher powered users present and, as a result, is exceptionally well qualified to comment on the WCA Petition.

II. THE COMMISSION HAS ALREADY CONSIDERED AND REJECTED THE ARGUMENTS RAISED IN THE WCA PETITION

2. Metricom opposes WCA's proposal to limit WCS operations to 20 watts EIRP. As WCA itself noted, the Commission expressly considered BellSouth's request to limit WCS operations to 20 watts and declined to adopt such a limitation.[1/] WCA has not raised any new arguments for imposing a 20-watt EIRP limitation, but rather, reiterates arguments that the Commission has already considered. Specifically, WCA asserts that, "neither the Commission nor any commenting party has disputed BellSouth's technical showing or otherwise suggested that the industry's concerns were not legitimate."[2/] The Commission aptly pointed out, however, that the concerns of the MDS/ITFS community were first raised in late-filed *ex parte* comments and thus no potential WCS applicants had an

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1/ WCA Petition, p. 9.

2/ WCA Petition, p. 9.

opportunity to respond to the assertions.[3/] Similarly, in an attempt to demonstrate the Commission's policy of imposing maximum power limitations on other services, WCA cited to several proceedings in which the Commission established specific power limits. In its Order, the Commission also referenced the National ITFS Association's *ex parte* presentation, at which the Association asserted that the Commission has a long standing policy of protecting existing operations from interference caused by newly authorized services.[4/] The Commission has already considered, and rejected, these arguments. WCA has not added anything new which requires reconsideration.

III. ANY INTERFERENCE PROBLEMS CREATED BY WCS OPERATIONS UNDER THE RULES ADOPTED WILL BE MINIMAL

3. While much is said about the alleged interference to be caused by WCS operations if WCS EIRP is not limited, a careful examination of these allegations illustrates that any cases of interference will actually be minimal. At paragraph 155 of its Order, the Commission describes BellSouth's submission concerning the alleged interference and indicates that the Bell- South claim is that a WCS transmitter with more than 80 watts EIRP *that is located within 300 feet* of a MDS/ITFS downconverter would overload that device.

[3/] WCS Order at ¶ 157.

[4/] WCS Order at ¶ 156.

4. Citing to this submission, the WCA Petition, at page 9, states that blanketing interference will result from high power WCS signals *in close proximity* to MDS/ITFS receivers. In the Engineering Statement of T. Lauriston Hardin, P.E., in support of the WCA Petition position that "block downconverter overload will occur," it was assumed that this condition would be present when the MDS/ITFS receive site *was within 300 feet* of the WCS transmit site.

5. Accordingly, the interference being complained of, which the Commission has already dealt with and dismissed, is likely to occur, according to WCA, when WCS transmitters and MDS/ITFS downconverters are located *within 300 feet* -- the length of a football field -- of each other. This means that the facilities practically need to be co-located for the alleged interference to occur. Because of the anticipated point-to-point operations involved with WCS, antenna sites will need to be carefully engineered and strategically placed at optimum positions. Therefore, the likelihood of these WCS fixed transmitters being located a mere 300 feet away from a particular downconverter generally located in a residence is minimal at best.

6. Because it is unlikely that a WCS fixed transmitter will be located within 300 feet of a MDS/ITFS downconverter, any instances of severe interference to downconverters will represent only a very small percentage of all the downconverters being operated in any particular geographic area. This small percentage of downconverters which may be affected certainly does not justify

Commission action which affects the entire WCS. Because WCS will operate in a different frequency band than MDS/ITFS, matters of alleged interference should be able to be resolved with technological fixes.

IV. OTHER "HIGH POWER" OPERATIONS ALREADY EXIST IN THE 2.1 TO 2.7 GHz FREQUENCY BAND

7. The WCA is concerned with interference from WCS devices because the "inexpensive" broadband MDS/ITFS downconverters receive all frequencies between 2.1 and 2.7 GHz frequency bands.[5/] It must be noted that there are already high power operations in that frequency band. For example, ISM equipment operating in the 2.4 GHz frequency band in accordance with Part 18 of the Commission's rules has no power limits specified. Similarly, Amateur operations under Part 97 of the Commission's rules in the 2.3 and 2.4 GHz bands are authorized to operate with up to 1500 watts output power and unlimited EIRP.

8. Accordingly, the problem WCA alleges will occur because of WCS operations is not new or novel -- currently authorized operations already have the potential to create the same problems alleged by the WCA. Despite this potential, there does not appear to be any evidence of interference to MDS/ITFS downconverter operations. Because of these existing operations, it appears that it would be good engineering practice to design MDS/ITFS downconverters in a robust fashion so that they can tolerate any interference from out-of-band transmissions. If the downconverters

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[5/]WCS Order at ¶ 155.

can be designed to operate in the face of potential interference from ISM and Amateur operations, there is no reason why they cannot be designed to tolerate interference from another out-of-band operation, WCS.

9. Because frequencies are becoming more congested with the public's demand for new and innovative services, the Commission should not allow any service providers to merely sit back and complain about potential interference from new, out-of-band sources. With the Commission's mandate of providing new and technologically advanced services, operators must be required to develop and design their equipment in a robust fashion so that it can operate satisfactorily in a congested environment.

V. THE COMMISSION MUST PROVIDE ADEQUATE POWER FOR WCS OPERATIONS

10. The Commission has recognized in its Order creating the WCS that it is necessary to provide for enough EIRP to make this new service attractive and viable. Sufficient power is absolutely necessary for range and penetration considerations. Without adequate range and penetration capabilities, the service becomes economically unattractive because of the vast amount of infrastructure which would be required to provide the service. In other words, limiting the EIRP would have the effect of making the service much more expensive to provide and, therefore, not economically viable. In such a case, the Commission would be creating a service which is essentially "dead on arrival."

VI. CONCLUSION

For all of the foregoing reasons, Metricom submits that the WCA Petition for Reconsideration should be denied.

Respectfully submitted,

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